

REMARKS

Reconsideration in view of the foregoing amendments and following remarks is respectfully requested.

The Examiner rejects claims 21, 46-48, 51-54 and 57-65 as being anticipated by Drasler US 5,496,267. The Examiner asserts that the reference discloses a water jet atherectomy device (FIG. 4) having a first tube 174 within a second tube, a jet body 161 with a jet emanator, at least one outflow orifice 170 and at least one inflow orifice 172. It is believed that the Examiner is incorrect. The flows are not even in the correct direction. The structure provided in FIG. 4 of '267 is different from the present invention, and does not provide the same function as the present invention, as further discussed below.

The Examiner refers to item 170 as an "outflow orifice". It is believed that the Examiner is incorrect. Item 170 of '267 is defined as an evacuation port at column 7, line 7, so any flow through item 170 would be into evacuation lumen 172 and subsequently out of the body. Therefore, item 170 cannot be analogous to the outflow orifice of the present invention since the outflow orifice(s) of the present invention passes fluid out of the second lumen into the body vessel as cross stream jet(s), whereas item 170 of '267 has flow into the exhaust lumen for removal. Structurally, the '267 device is arranged so that the jet 160 drives debris inward through evacuation port 170, whereas the present invention is structurally arranged so that the jet(s) in combination with inflow orifice(s) create a region of elevated pressure in the second lumen and drive flow out of outflow orifice(s). Thus, item 170 of '267 is neither structurally or functionally equivalent to outflow orifice(s) of the present invention. The '267 device lacks an outflow orifice which is a required element of the present invention as taught and as claimed.

The Examiner refers to item 172 as an "inflow orifice". It is believed that the Examiner is incorrect. Item 172 of '267 is defined as an evacuation lumen at column 7, line 6. The direction and orientation of fluid flow is not even the same: evacuation lumen 172 of '267 has particulate debris flowing in a distal-to-proximal direction along the evacuation lumen and subsequently out of the body, while inflow orifice(s) of the present invention have fluid passing from the body vessel into the second tube, some of which subsequently passes through outflow orifice(s) back into the body vessel. Thus, item 172 of '267 is not equivalent to inflow orifice(s) of the present invention.

The Examiner indicated a region on a copy of '267 FIG. 4 and the Examiner described this region "inflow and/or outflow orifice". However, this is not an accurate description because the indicated region does not have the structure or function of inflow and/or outflow orifices as defined by the present invention. Following is a relevant portion of the specification of the present invention at page 15 lines 3-17, which describes the outflow orifices. (Selected text has been emphasized for ease of reference.)

The outflow means consists of one or more outflow orifices through which saline, blood or other fluid or a mixture thereof with macerated thrombus or other unwanted material debris flows from a region of higher pressure within the exhaust tubular means or other tubular means to outside the exhaust tubular means or other tubular means. The outflow orifices(s) are typically somewhat downstream from the high velocity region of the high velocity jet(s) where the velocities are lower and the mass flow rate is greater due to entrained fluid; and flow of fluid with or without macerated debris typically flows through the outflow orifice(s) with a component in the radial direction, creating cross stream jet(s). The outflow orifices may be round, elliptical, conical, slits, gaps between components, or other shape or design.

The region indicated by the Examiner on '267 FIG. 4 does not have an orifice through which fluid flows from region of higher pressure within the exhaust tube ("evacuation lumen 172"). Rather, '267 FIG. 4 has a gap which provides for entrainment and may potentially allow some escape of entrained fluid before it enters into the evacuation lumen. The gap of '267 FIG. 4 does not create a cross stream jet like the structure of the present invention. The principle function of the gap of '267 FIG. 4 is simply to provide access so that the jet may impinge upon calcified deposits attached to the wall of the artery. The outflow, cross stream jets, recirculation, and inflow fluid path of the present invention is not provided by '267; there would be no significant effect on the calcified deposits treated by the '267 device anyway.

In summary, the unique claimed features, structures, and function of the present invention as claimed are not anticipated by or obvious from reading of Drasler USP 5,496,267. Applicants nevertheless have amended the independent claims to add structural language to further distinguish the claims. Applicants, therefore, request reconsideration of independent claims 21, 51 and 65, and their allowance along with the corresponding dependent claims.

Applicants acknowledge the Examiner's withdrawal of claims 49, 50, 55, 56 and 66-70 as being drawn to a nonelected species. However, Applicants believe that claims 55 and 68-70 read on the elected species. The description of FIGS. 18-19, which illustrate the elected species E as designated by the Examiner, includes the features claimed in claims 55 and 68-70, as follows. At page 46, lines 11-16, multiple jets as claimed in claim 55 are described. At page 44, lines 18-19, thrombus debris removal through separate means as claimed in claims 68 and 70 is described. Exhaust regulation means as claimed in claim 69 is cited at page 16, lines 13-22, and elsewhere and

could be utilized with the elected species if a separate tubular means were provided for debris removal. Applicants, therefore, request reconsideration of claims 55 and 68-70. If the argument for inclusion of claims 55 and 68-70 is not sufficient, Applicants intend to request reconsideration of these claims upon allowance of base claims 51 and 65 or similar.

In summary, at least the following parts of claims 21, 51 and 65 do not read on the '267 device. Claim 21, part d, the '267 device does not have an outflow orifice in the wall of the second tube. Claim 51, part g, and claim 65, part h, the '267 device does not have outflow means at a region of elevated pressure in the second tube. Thus, claims 21, 51 and 65 do not read on the '267 device.

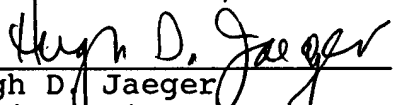
Claims 21, and 46-48, 51-54 and 57-65 are drawn to a thrombectomy device and system. Claims 21, 51 and 65 have been amended to add structural language and further distinguish the claims. New claims 71 and 72 have been added. No new matter has been added.

If there are any further issues yet to be resolved to advance the prosecution of this patent application to issue, the Examiner is requested to telephone the undersigned counsel.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,

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